

ATOMIC ENERGY *newsletter*[®]

A SERVICE FOR INDUSTRY BUSINESS ENGINEERING AND RESEARCH
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Dear Sir:

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New company to design, manufacture and sell nuclear reactors in Germany has been formed by North American Aviation, Inc., and Demag A. G., Duisberg, Germany. The new firm, Interatom International Atomreaktorbau G.m.b.H., which will be jointly owned by North American and Demag, will draw heavily on the reactor experience of Atomics International, Canoga Park, Calif., subsidiary of North American. Initially it is planned that Atomics International will handle engineering and manufacturing, while Interatom will manage any projects and subcontracting in Germany. (Demag A.G. designs and manufactures heavy industrial equipment. It has extensive manufacturing facilities, and maintains a large sales force in Europe.) (Other BUSINESS NEWS, p. 2 this LETTER.)

Contract to design and furnish reactor compartment components for the U. S. Navy's new nuclear powered aircraft carrier (CVAN) has been awarded by the Navy to Westinghouse Electric Corp., Pittsburgh. The contract, in the amount of \$46,050,000 covers such items as controls, valves, pumps, instrumentation, etc. Under a previous contract, the company will also design and furnish the pressure vessel and steam generators for this ship. The nuclear propulsion plant for the CVAN was designed and developed at the USAEC's Bettis Plant, in Pittsburgh, which is wholly Westinghouse operated. Construction of the carrier is included in the Navy's fiscal 1958 shipbuilding program; contract has been given Newport News Shipbuilding & Drydock Co., Newport News, Va., for this job. (Other CONTRACT NEWS, p. 4 this LETTER.)

Aerojet-General Corp., Azusa, Calif., (subsidiary of General Tire & Rubber Co.) has now acquired 100% stock ownership of Aerojet-General Nucleonics, its own subsidiary. Previously, its interest in this subsidiary was 80%. Aerojet-General Corp. now makes a variety of rocket propulsion units; it started business making jet-assisted take-off (JATO) units for aircraft. The Nucleonics subsidiary was organized in July, 1956, and specializes in nuclear reactors for training and medical purposes; it has delivered about nine of these reactors. It also holds USAEC contract for an experimental gas-cooled reactor and for design and partial construction of its associated facility at reactor testing station, Arco, Idaho. (Other FINANCIAL NEWS, p. 3 this LETTER.)

Lorado Uranium Mines, Canadian uranium producer holding premium price Government contract, is experiencing operational difficulties and has obtained further bank credit, the adjourned annual meeting was told last week in Toronto. Production earnings for 1957 are expected to be some \$1,380,000 below previous estimates. With liquid assets on Oct. 31, 1957 of \$1,200,000, Lorado has current liabilities of \$2,858,752. H. W. Wright, Lorado managing director, told the meeting that difficulties are result of high content of carbonate and other acid consuming minerals in the uranium ores from the area shippers who supply part of Lorado's mill feed. These ores require several times the amount of sulfuric acid per ton as compared with the ore from Lorado's own mine. This, plus other difficulties, has kept the mill operating at about half its rated capacity. (Other RAW MATERIALS NEWS, p. 5 this LETTER.)

ATOMIC ENERGY BUSINESS NEWS...

INDUSTRIAL FIRM NOT TO ACCEPT FIXED-COST NUCLEAR CONSTRUCTION CONTRACTS:-

General Electric Co. will not accept any more fixed-cost contracts for construction of nuclear power facilities, Ralph J. Cordiner, president, said last fortnight in New York. Future contracts for such jobs will have escalator clauses to protect the company from costs which arise after original estimates are in, he stated. In referring to the Dresden, Ill., nuclear power station which GE is constructing for a group of utilities headed by Commonwealth Edison Co., Chicago, Mr. Cordiner noted that costs have exceeded the contract price of \$45 million. The contract was accepted on the premise that GE might lose money at this price, he stated, since the firm wanted the satisfaction of building the first privately financed nuclear power station.

SITE SELECTED FOR ARMY'S NEW NUCLEAR POWER PLANT:- Fort Greely, Alaska, has been selected by the Army as site of its new nuclear power plant, to be similar to its first at Ft. Belvoir, Va., now in operation as a training unit. It will be of the so-called field assembly type, i.e., transportable in sections to remote points, possibly by air transport. The Fort Greely unit will be transported by conventional means, however, the Army said. It is planned that the facility will provide both heat and electricity for the Fort Greely post. Budget item of \$6,675,000 for the project has been authorized by Congress.

LARGE SCALE HOMOGENEOUS NUCLEAR POWER PLANT PROPOSED:- Proposal for construction of large-scale aqueous homogeneous nuclear power plant has been submitted to the USAEC by Pennsylvania Power & Light Co., and Westinghouse Electric Corp. Filing was made under the USAEC's power demonstration reactor program by which the USAEC offered assistance to nuclear power plant projects. The two companies propose to build in PP&L's eastern Pennsylvania service area plant with generating capacity of from 70,000 to 150,000 electrical kilowatts at an estimated cost of \$57 million. It would be the only nuclear power project in the U.S. dealing with a single-region slurry reactor system based on the thorium-uranium cycle. Westinghouse and PP&L started work on this project in 1955, and so far have invested \$5.5 million in development work; Baltimore Gas & Electric recently joined the research group. The firms believe at least two more years of research and development will be required, and ask in their proposal that USAEC contribute \$7.3 million for research during the 1958-59 pre-construction period. They also ask the USAEC to contribute a further \$18 million during construction and up to the end of the first five years of operation, as well as USAEC waiver of fuel and heavy water charges for the same period. (Potential advantages of the homogeneous reactor type include low fuel cost due to high breeding ratio, the use of inexpensive thorium as fuel, as well as uranium, and the reactor's inherently safe characteristics.)

NEW SUBSIDIARY FORMED TO HANDLE OVERSEAS OPERATIONS:- All overseas operations of Vitro Corp. will now be handled by Vitro International, new subsidiary with headquarters in Geneva, Switzerland. It will handle the company's European sales, licensing, engineering and manufacturing operations in the fields in which Vitro is now active. These include nuclear energy, nuclear materials, chemical, metallurgical and petroleum processing facilities, mining, and extractive metallurgy. Norman A. Spector will be president of the new subsidiary; he will relinquish duties as vice-president of Vitro's engineering division to handle the new position full time. (Vitro is now doing design and construction of three major foreign projects. They include a nuclear test facility at Milan for the government of Italy; a heavy water-fertilizer plant for the government of India at Nangal; and a nuclear power station for SIMEA, a government-owned corporation near Rome, Italy.)

PEOPLE...in nuclear energy work...

E. B. Gillanders has been elected president of Northspan Uranium Mines, Ltd. (Canada) succeeding J. B. Aird. Dr. Gillanders is executive vice-president of Rio Tinto Mining Co. of Canada, Ltd., who are the major stockholders in Northspan.

Everett Sarratt has been appointed chief engineer, instrument products, at Tracerlab, Inc., Waltham, Mass. Mr. Sarratt comes to Tracerlab from McKay Radio, Clark, N.J., where he had been chief engineer of the marine division.

Richard Chase has been made purchasing agent, and Charles Doucette head of the company's tube and vacuum department at High Voltage Engineering Corp., Burlington, Mass. Both men have been with the firm since 1949, its first year of operations.

ATOMIC ENERGY FINANCIAL NEWS...

SHARES TO BE CONVERTED & RIGHTS OFFERED BY MINING CONCERN:- Proposal to re-classify its class "A" shares to common shares will be made to shareholders of Rio Tinto Mining Co. of Canada at general meeting this Friday (Dec. 27); 100 common shares will be issued for each class "A" held. Also under the proposal, common shareholders of record Jan. 15, 1958 will be offered right to buy additional common stock on one-for-five basis at price of \$1.50 per share, up to Feb. 19. Proceeds from sale of these shares will be used by Rio Tinto to purchase 6 1/4% Northspan Uranium Mines debentures up to principal amount of \$8,500,000. (Rio Tinto has 187,000 class "A" shares issued; after conversion there will be 18,700,000 common shares. The total authorized capitalization, after this reclassification, will be 80,000,000 common shares, of which 42,716,490 will have been issued.) (Meanwhile Northspan Uranium, which will receive monies from this rights offering, continues mine preparation and plant construction work at its three mills and four mines in the Blind River uranium area of N. Ontario. First production has been achieved at its Lake Nordic plant.)

SALE OF COMPANY PENDING:- Following extensive negotiations, Mandrell Industries, Houston, Tex., plans purchase of Sequoia Process Co., Redwood City, Calif. Sequoia pioneered in developing what it calls the Hyrad process for irradiating polyethylene products, and exclusively licensed it to Grace Chemical Co. on a worldwide basis. Mandrell manufactures electronic instruments.

CORPORATE CHANGE MADE:- Nuclear-Chicago Corp., manufacturer of nuclear instruments and allied products, has changed its charter to become a Delaware corporation through statutory merger with its wholly owned subsidiary Phelan, Kuranz, Mitchell Corp., which had been a Delaware corporation. Nuclear-Chicago Corp. had been chartered under Illinois law, and had been a corporation of that state.

STOCKHOLDING CHANGES MADE:- Recent changes in stockholdings by officers or major stockholders of firms in the nuclear field include sale of 1,000 class "A" shares of Nuclear Corp. of America by K. H. Morganstern, executive vice president. Mr. Morganstern's direct holdings then totaled 29,400 shares..... Paul Westerfield, director of Northspan Uranium Mines, Ltd., received 44,000 common shares as partial distribution of his proportionate share of the holdings of Northspan of the assets of Kinloch Mines, Ltd., which is being liquidated.

ATOMIC ENERGY PATENT DIGEST...latest grants ...

ISSUED December 10, 1957 to PRIVATE ORGANIZATIONS AND/OR INDIVIDUALS:- (1) Apparatus for imparting a scanning movement to a beam of charged particles. J. C. Nygard, inventor. No. 2,816,231 assigned to High Voltage Engineering Corp., Cambridge, Mass. (2) Device for calibrating a penetrative radiation well logging system. S. A. Scherbatskoy, inventor. No. 2,816,235 assigned to PGAC Development Co., Houston, Tex. (3) Neutron sources. Clark Goodman, inventor. No. 2,816,242 assigned to Schlumberger Well Surveying Corp., Houston, Tex.

ISSUED December 10, 1957 to GOVERNMENT ORGANIZATIONS:- (1) Seal for rotating shaft. R. T. Coffman, inventor. No. 2,815,968 assigned to USAEC. (2) Extraction of uranyl nitrate from aqueous solutions. N. H. Furman, R. J. Mundy, inventors. No. 2,816,005 assigned to USAEC. (3) Refractory article and process of manufacturing same. N. E. Hamilton, inventor. No. 2,816,042 assigned to USAEC. (4) Reactor control. W. J. Ruano, inventor. No. 2,816,068 assigned to USAEC. (5) Method of recovering thorium. R. W. Fisher, inventor. No. 2,816,122 assigned to USAEC.

ISSUED December 17, 1957 to PRIVATE ORGANIZATIONS:- (1) Separation of zirconium and hafnium halides. William K. Plucknett, inventor. No. 2,816,814 issued to inventor of record.

ISSUED December 17, 1957 to GOVERNMENT ORGANIZATIONS:- (1) High-speed camera. B. T. Rogers, Jr., W. C. Davis, inventors. No. 2,816,476 assigned to USAEC. (2) Seal for high speed centrifuge. C. W. Skarstrom, inventor. No. 2,816,704 assigned to USAEC. (3) Fractional distillation separation of plutonium from light elements. B. B. Cunningham, inventor. No. 2,816,813 assigned to USAEC. (4) Means for controlling a nuclear reactor. V. C. Wilson, W. P. Overbeck, Louis Slotin, D. K. Froman, inventors. No. 2,816,860 assigned to USAEC. (5) Shock excited oscillator. R. Creveling, inventor. No. 2,817,019 assigned to USAEC. (6) Spark gap switch. R. B. Neal, inventor. No. 2,817,056 assigned to USAEC. (7) Apparatus for non-destructive flaw detection. M. J. Stateman, H. R. Holloway, inventors. No. 2,817,060 assigned to USAEC.

BIDS ASKED, CONTRACTS AWARDED...on nuclear projects...

BIDS ASKED:- Bids have now been asked on some 29 parcels of land ranging from 2 to 272 acres, at Oak Ridge, Tenn. This is the first land offered for sale for subdivision under the sales disposal program for Oak Ridge. Information on the property from Housing & Home Finance Agency, P.O. Box 515, Oak Ridge, Tenn.

CONTRACTS AWARDED:- On low bid of \$663,547 Graver Tank & Mfg. Co., Inc., Arcadia, Calif., has been awarded contract by the USAEC to construct the building shell for the experimental breeder reactor II (EBR-II) at the national reactor testing station, Arco, Idaho. Contract calls for construction of containment vessel 80-ft. in diameter with an over-all height of 139-ft., to be of one-inch carbon steel plate. Pit is to be excavated for the building shell, and a 200,000-gallon flat bottom water storage tank is to be constructed.

Gibbs & Cox, Inc., New York, has received contract from Maritime Administration for study of safeguards for nuclear-powered ships. The study, to encompass personnel safety measures, precautions when docked, etc., is expected to take some 18-months for completion.

Fremont Minerals, Inc., Denver, Colo., has now received contract from the USAEC for the purchase by the Commission of uranium concentrates. With contract at hand, Fremont will erect processing mill at Riverton, Wyoming, at estimated cost of \$3,500,000; capacity of mill is to be 500 tons of ore per day. (Fremont is subsidiary of Susquehanna Corp., Chicago, parent company of Mines Development, Inc. The latter operates uranium processing mill at Edgemont, S. Dakota.)

PRODUCTS, PROCESSES, INSTRUMENTS...for nuclear jobs...

NEW INSTRUMENTS:- Model 132 analyzer computer is designed for use with all gamma-sensitive scintillation counters. Said to be the only one of its kind commercially available, the instrument combines in one chassis high voltage supply, single channel pulse-height analyzer, binary scaler, and an automatic push-button computing circuit. --Nuclear-Chicago Corp., Chicago 10, Ill.

Model P-20C is recent modification of this firm's scintillation detector. It incorporates a by-pass switch on its back plate which permits the output pulses of the photomultiplier tube to by-pass the built in pulse amplifier, and to be fed directly to the linear amplifiers used for spectrometry. The increasing use of spectrometric analysis for medical and research purposes prompted this change, the company notes. --Tracerlab, Inc., Waltham 54, Mass.

NEW PRODUCTS:- New material for radiation shielding, a suspension of finely divided lead particles in paraffine wax developed by the Livermore Laboratory of the USAEC, is now to be produced and marketed commercially by California Ink Co., San Francisco. When used for nuclear reactor shielding, the company points out, it will allow reduction in thickness and weight compared with conventional lead & concrete shielding.

MANUFACTURERS NEW FACILITIES:- Now being built in Glenrothes, Scotland, is new \$250,000 plant of Beckman Instruments, Ltd. Subsidiary of the California manufacturer of industrial and laboratory instruments, including nuclear devices, the firm hopes to reach additional instrument and component markets in the U. K. and other sterling areas through its new plant.

Nuclear Enterprises (GB) Ltd., with its manufacturing facilities in Edinburgh, Scotland, established, is now manufacturing and introducing in the U.K. its line of scintillation detectors for industrial tracer investigations, trade-named Scintillometers. The Edinburgh organization was set up by the parent concern of the same name, which has been operating for some years in Canada.

Department of nuclear science and engineering has been formed by the New York firm of G. C. Dewey & Co., Inc. Dewey has been engaged in weapons system analysis and operations research. The new department is designed to provide industry with analytical data in the reactor field.

MANUFACTURERS BUSINESS REPORTS:- An increase in incoming orders of 24% has been experienced by Radiation Counter Laboratories, Skokie, Ill., for the five months ending Nov. 30, 1957 (its fiscal year) as compared with similar period last fiscal year. The firm attributes the gain to new products, and better sales coverage, and looks to both foreign and domestic markets for continuing gains. It considers recent deliveries to the French Atomic Energy Commission of extensive health monitoring equipment an indication that it can compete successfully in European markets with locally manufactured products.

NUCLEAR WORK ABROAD...

FRANCE:- Nuclear fuel research and development company has been formed by the firm of St. Gobain, acting jointly with Forges et Ateliers du Creusot, metallurgical and construction firm. Called Centre des Recherches pour Combustibles Atomiques, the new company, capitalized at \$600,000 will work with the French Atomic Energy Commission. St. Gobain also has interests in other atomic energy groups, all of which are engaged in projects allied with the French Commission.

GERMANY:- Present plans are for heavy water to be produced by Farbwerke Hoechst by the end of this year. It was hoped to have the plant on stream earlier, but the contractors, Linde, were unable to deliver certain items on time. Production of heavy water is to be six tons per year. Output will be used in the German-designed experimental reactor now under construction at Karlsruhe.

GREAT BRITAIN:- The National Institute for Research in Nuclear Science's high energy laboratory at Harwell is to have as director T. G. Pickavance. Dr. Pickavance is now deputy head of the general physics division of the Atomic Energy Research Establishment, Harwell. The laboratory which is to be called the Rutherford High Energy Laboratory, to commemorate the work of the late Lord Rutherford in the development of nuclear physics, is being built on a site adjacent to AERE. It will house the institute's first large accelerator; design and supervision of construction of this accelerator is being handled by an AERE group under the direction of Dr. Pickavance.

RAW MATERIALS...prospecting, mining, marketing...

UNITED STATES:- Data vital to the uranium industry, but withheld because of security regulations, must be released if the uranium industry is to survive, Patrick J. Hurley, president of the Uranium Institute of America told recent meeting in Albuquerque, N.M., held by New Mexico Economic Commission. He requested the USAEC to give the uranium industry information on present demand; anticipated future needs for uranium; and details about its contracts and commitments for procurement of both foreign and domestic uranium ores. No decisions can be made by mining concerns without these facts, Gen. Hurley asserted. Along other lines, Jesse C. Johnson, USAEC director of raw materials, said the Commission's new uranium policy is not a cutback, but places limitations on further expansion of the uranium mining industry. Mr. Johnson told the meeting that these limitations are a short-range situation; taking the long-range view, there will probably be need for expansion, he noted.

The current pace of uranium discovery is proceeding at a rate about two and one-half times faster than required to supply the future annual requirements of all mills currently contracted for by the USAEC, E. A. Youngberg, assistant manager of the USAEC's Grand Junction, Colo. office told a recent meeting in Denver, Colo., jointly sponsored by the U. S. Chamber of Commerce and the Uranium Institute of America. Charles G. Manly, of the USAEC's division of civilian application, said the question now uppermost is "when will civilian requirements added to military requirements begin to raise the level of the planned USAEC purchasing program?" Mr. Manly estimated civilian demand would come before the late 1960's. Nuclear power plants in the U.S. will not be competitive with conventional ones for many years, Henry H. Hausner, general manager of the nuclear energy division of Penn-Texas Corp., told the meeting, noting current nuclear power costs of 20 to 50 mills per kilowatt hour. Dr. Hausner said these are likely to drop to 10 to 12 mills by 1970, but would still compare with the 4 to 9 mills cost of conventional power plants.

GERMANY:- Minister of External Affairs Smith officially stated last fortnight that W. Germany has agreed to purchase from Canada unspecified quantities of uranium for commercial and research purposes.

SWEDEN:- Atomic Energy, Ltd., has recently announced that economic methods of extraction of uranium from Swedish shale deposits have been accomplished. The company presently has two plants for handling uranium ores. One, in Central Sweden, concentrates the ores to uranium content of about 10%, from the 0.02 to 0.03% of the original shale. The other, in Stockholm, produces pure uranium metal. The company estimates Sweden's uranium needs at 20-tons per year by 1960, and more than 200-tons by 1970.

Sincerely,

The Staff,
ATOMIC ENERGY NEWSLETTER

December 24th, 1957

